

SEQUENCE LISTING

<110> Howard A. Fields
<110> Yury E. Khudyakov

<120> Synthetic Peptides Immunoreactive With Hepatitis A
Virus Antibodies

<130> 14114.0342P1

<140> US/10/031,088
<141> 2002-01-14

<150> PCT/US00/19267
<151> 2000-07-14

<150> 60/144,412
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VP2 and VP4 Peptides

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1 5 10 15

Ile Gln Ser Val Gln
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VP2 and VP4 Peptides

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Ser Ser Val His Gln
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VP2 and VP4 Peptides

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Glu Val Gly Ser His Gln Val Glu Pro Leu Arg Thr Ser Val Asp Lys
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Pro Gly Ser Lys Gln
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VP2 and VP4 Peptides

<400> 4
Glu Pro Leu Arg Thr Ser Val Asp Lys Pro Gly Ser Lys Lys Thr Gln
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Gly Glu Lys Phe Gln
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VP2 and VP4 Peptides

<400> 5
Asp Lys Pro Gly Ser Lys Lys Thr Gln Gly Glu Lys Phe Phe Leu Ile
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His Ser Ala Asp Gln
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<210> 6
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VP2 and VP4 Peptides

<400> 6
Leu Tyr Asn Glu Gln Phe Ala Val Gln Gly Leu Leu Arg Tyr His Thr
1 5 10 15

Tyr Ala Arg Phe Gln
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<210> 7
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 VP2 and VP4 Peptides

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 His Thr Tyr Ala Arg Phe Gly Ile Glu Ile Gln Val Gln Ile Asn Pro
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 Thr Pro Phe Gln
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 VP2 and VP4 Peptides

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 Pro Gly Asp Gln
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 VP2 and VP4 Peptides

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 Trp Ser Glu Leu Gln
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 VP2 and VP4 Peptides

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Arg Phe Thr Asp Gln
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VP3 Peptide

<400> 11
Ser Asp Pro Ser Gln Gly Gly Gly Ile Lys Ile Thr His Phe Thr Thr
1 5 10 15

Trp Thr Ser Ile Gln
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<210> 12
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VP3 Peptide

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Gly Gly Ile Lys Ile Thr His Phe Thr Thr Trp Thr Ser Ile Pro Thr
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Leu Ala Ala Gln
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VP3 Peptide

<400> 13
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Ile Pro Val Asp Gln
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 VP3 Peptide

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 Asp Pro Tyr Phe Gln
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 VP3 Peptide

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 1 5 10 15
 Phe Phe Gln Met Gln
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 VP3 Peptide

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 Asn Pro Asp Gln Gln
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 VP3 Peptide

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1 5 10 15

Arg Gly Asp Leu Gln
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VP3 Peptide

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Tyr His Ser Gly Gln
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VP3 Peptide

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Phe Cys Phe Val Gln
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VP3 Peptide

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Gly Asn Glu Leu Gln
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VP3 Peptide

<400> 21
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Ile Thr Gly Val Gln
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<210> 22
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VP3 Peptide

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Glu Cys Phe Ala Gln
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<210> 23
<211> 21
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VP1 Peptide

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Thr Thr Val Ser Thr Glu Gln Asn Val Pro Asp Pro Gln Val Gly Ile
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Thr Thr Met Lys Gln
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<210> 24
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VP1 Peptide

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Gln Asn Val Pro Asp Pro Gln Val Gly Ile Thr Thr Met Lys Asp Leu
1 5 10 15

Lys Gly Lys Ala Gln
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<210> 25
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VP1 Peptide.

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1 5 10 15

Ile Thr Thr Ile Gln
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VP1 Peptide

<400> 26
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1 5 10 15

Phe Pro Glu Leu Gln
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<210> 27
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VP1 Peptide

<400> 27
Glu Asp Pro Val Leu Ala Lys Lys Val Pro Glu Thr Phe Pro Glu Leu
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Lys Pro Gly Glu Gln
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<210> 28
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 VP1 Peptide

<400> 28
 Ala Lys Lys Val Pro Glu Thr Phe Pro Glu Leu Lys Pro Gly Glu Ser
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Arg His Thr Ser Gln
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 VP1 Peptide

<400> 29
 Phe Pro Glu Leu Lys Pro Gly Glu Ser Arg His Thr Ser Asp His Met
 1 5 10 15

Ser Ile Tyr Lys Gln
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 VP1 Peptide

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 Asp His Met Ser Ile Tyr Lys Phe Met Gly Arg Ser His Phe Leu Cys
 1 5 10 15

Thr Phe Thr Phe Gln
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VP1 Peptide

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1 5 10 15

Phe Pro Ile Thr Gln
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VP1 Peptide

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1 5 10 15

Ala Leu Ser Ile Gln
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<210> 33
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VP1 Peptide

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1 5 10 15

Phe Pro Arg Ala Gln
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<210> 34
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VP1 Peptide

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Ser Asn Ala Met Gln
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VP1 Peptide

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1 5 10 15
Ile Ala Ala Gly Gln
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VP1 Peptide

<400> 36
Met Ser Arg Ile Ala Ala Gly Asp Leu Glu Ser Ser Val Asp Asp Pro
1 5 10 15
Arg Ser Glu Glu Gln
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VP1 Peptide

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1 5 10 15
Lys Arg Phe Glu Gln
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<210> 38
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VP1 Peptide

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<400> 38
Val Asp Asp Pro Arg Ser Glu Glu Asp Lys Arg Phe Glu Ser His Ile
1 5 10 15

Glu Cys Arg Lys Gln
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<210> 39
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<212> PRT
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P2A Peptide

<400> 39
Ser His Ile Glu Cys Arg Lys Pro Tyr Lys Glu Leu Arg Leu Glu Val
1 5 10 15

Gly Lys Gln Arg Gln
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P2A Peptide

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Pro Tyr Lys Glu Leu Arg Leu Glu Val Gly Lys Gln Arg Leu Lys Tyr
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Ala Gln Glu Glu Gln
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<210> 41
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P2A Peptide

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1 5 10 15

Pro Pro Arg Lys Gln
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<210> 42
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P2A Peptide

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Ile Ser Leu Phe Gln
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<210> 43

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P2A Peptide

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Met Lys Phe Ser Gln
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<210> 44

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P2A Peptide

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Asn Ser Lys Asp Gln
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P2A Peptide

<400> 45

Asp Leu Glu Glu Ile Ala Ala Asn Ser Lys Asp Phe Pro Asn Met Ser
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Glu Thr Asp Leu Gln
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<210> 46
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P2A Peptide

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Lys Ile Asn Leu Ala Asp Arg Met Leu Gly Leu Ser Gly Val Gln Glu
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Ile Lys Glu Gln
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P2A Peptide

<400> 47
Gln Arg Leu Lys Tyr Ala Gln Glu Glu Leu Ser Asn Glu Val Leu Pro
1 5 10 15
Pro Pro Arg Lys Met Lys Gly Leu Phe Gln
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<210> 48
<211> 25
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P2A Peptide

<400> 48
Trp Leu Asn Pro Lys Lys Ile Asn Leu Ala Asp Arg Met Leu Gly Leu
1 5 10 15
Ser Gly Val Gln Glu Ile Lys Glu Gln
20 25

<210> 49
<211> 21
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P2B Peptide

15

<400> 49
Val Ile Gln Gln Leu Asn Gln Asp Glu His Ser His Ile Ile Gly Leu
1 5 10 15
Leu Arg Val Met Gln
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<210> 50
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P2C Peptide

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Ala Asp Glu Phe Gln
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P2C Peptide

<400> 51
Leu Gly Ser Ile Asn Gln Ala Met Val Thr Arg Cys Glu Pro Val Val
1 5 10 15
Cys Tyr Leu Tyr Gln
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<210> 52
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P2C Peptide

<400> 52
Arg Cys Glu Pro Val Val Cys Tyr Leu Tyr Gly Lys Arg Gly Gly Gly
1 5 10 15
Lys Ser Leu Thr Gln
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<210> 53
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P2C Peptide

<400> 53
Thr Lys Pro Val Ala Ser Asp Tyr Trp Asp Gly Tyr Ser Gly Gln Leu
1 5 10 15

Val Cys Ile Ile Gln
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<210> 54

<211> 21

<212> PRT

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<223> Description of Artificial Sequence:Synthetic HAV
P2C Peptide

<400> 54
Val Ser Gly Cys Pro Met Arg Leu Asn Met Ala Ser Leu Glu Lys
1 5 10 15

Gly Arg His Phe Gln
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<210> 55

<211> 21

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P2C Peptide

<400> 55
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1 5 10 15

Phe Ile Ile Ala Gln
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<210> 56

<211> 21

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P2C Peptide

<400> 56
Asn Pro Ser Pro Lys Thr Val Tyr Val Lys Glu Ala Ile Asp Arg Arg
1 5 10 15

Leu His Phe Lys Gln
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<210> 57
<211> 21
<212> PRT
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P2C Peptide

<400> 57
Val Lys Glu Ala Ile Asp Arg Arg Leu His Phe Lys Val Glu Val Lys
1 5 10 15

Pro Ala Ser Phe Gln
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<210> 58
<211> 21
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P2C Peptide

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Val Lys Pro Ala Ser Phe Phe Lys Asn Pro His Asn Asp Met Leu Asn
1 5 10 15

Val Asn Leu Ala Gln
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<210> 59
<211> 21
<212> PRT
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P2C Peptide

<400> 59
Lys Asn Pro His Asn Asp Met Leu Asn Val Asn Leu Ala Lys Thr Asn
1 5 10 15

Asp Ala Ile Lys Gln
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P2C Peptide

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P3A Peptide

<400> 64
Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser Asn Ser Lys Leu Ser Gly
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Phe Phe Gln Ser Gln
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<210> 65
<211> 25
<212> PRT
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P3A Peptide

<400> 65
Ser Ala Val Ala Glu Phe Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser
1 5 10 15

Asn Ser Lys Leu Ser Gly Phe Phe Gln
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<210> 66
<211> 20
<212> PRT
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P3B Peptide

<400> 66
His Gly Val Thr Lys Pro Lys Gln Val Ile Lys Leu Asp Ala Asp Pro
1 5 10 15

Val Glu Ser Gln
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<210> 67
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P3C Peptide

<400> 67
Gly Leu Val Arg Lys Asn Leu Val Gln Phe Gly Val Gly Glu Lys Asn
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Gly Cys Val Arg Gln
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 P3C Peptide

<400> 68
 Asp Val Val Leu Met Lys Val Pro Thr Ile Pro Lys Phe Arg Asp Ile
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 Thr Gln His Phe Gln
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<210> 69
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 P3C Peptide

<400> 69
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 Val Asp Leu Thr Gln
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 P3C Peptide

<400> 70
 Lys Asn Asp Gly Thr Thr Val Asp Leu Thr Val Asp Gln Ala Trp Arg
 1 5 10 15
 Gly Lys Gly Glu Gln
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<210> 71
 <211> 20
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 P3C Peptide

21

<400> 71
Arg Gly Lys Gly Glu Gly Leu Pro Gly Met Cys Gly Gly Ala Leu Val
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Ser Ser Asn Gln
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<210> 72
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P3C Peptide

<400> 72
Val Ala Lys Leu Val Thr Gln Glu Met Phe Gln Asn Ile Asp Lys Lys
1 5 10 15

Ile Glu Ser Gln
20

<210> 73
<211> 21
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P3D Peptide

<400> 73
Arg Ile Met Lys Val Glu Phe Thr Gln Cys Ser Met Asn Val Val Ser
1 5 10 15

Lys Thr Leu Phe Gln
20

<210> 74
<211> 21
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P3D Peptide

<400> 74
Phe Thr Gln Cys Ser Met Asn Val Val Ser Lys Thr Leu Phe Arg Lys
1 5 10 15

Ser Pro Ile Tyr Gln
20

<210> 75
<211> 21
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<223> Description of Artificial Sequence:Synthetic HAV
P3D Peptide

<400> 75

Met Leu Ser Lys Tyr Ser Leu Pro Ile Val Glu Glu Pro Glu Asp Tyr
1 5 10 15

Lys Glu Ala Ser Gln
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<210> 76

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P3D Peptide

<400> 76

Leu Asp Glu Asn Gly Leu Leu Leu Gly Val His Pro Arg Leu Ala Gln
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Arg Ile Leu Phe Gln
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<210> 77

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P3D Peptide

<400> 77

Cys Pro Lys Asp Glu Leu Arg Pro Leu Glu Lys Val Leu Glu Ser Lys
1 5 10 15

Thr Arg Ala Ile Gln
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<223> Description of Artificial Sequence:Synthetic HAV
P3D Peptide

<400> 78

Ser Lys Thr Arg Ala Ile Asp Ala Cys Pro Leu Asp Tyr Ser Ile Leu
1 5 10 15

Cys Arg Met Tyr Gln
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<210> 79
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P3D Peptide

<400> 79
Arg Met Tyr Trp Gly Pro Ala Ile Ser Tyr Phe His Leu Asn Pro Gly
1 5 10 15

Phe His Thr Gly Gln
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<210> 80
<211> 21
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P3D Peptide

<400> 80
Lys Thr Met Ile Arg Phe Gly Asp Val Gly Leu Asp Leu Asp Phe Ser
1 5 10 15

Ala Phe Asp Ala Gln
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<210> 81
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P3D Peptide

<400> 81
Asp Leu Asp Phe Ser Ala Phe Asp Ala Ser Leu Ser Pro Phe Met Ile
1 5 10 15

Arg Glu Ala Gly Gln
20

<210> 82
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P3D Peptide

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<400> 82
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 1 5 10 15

Ser Pro Val Phe Gln
 20

<210> 83
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 P3D Peptide

<400> 83
 Gly Gln Lys Ile Val Asp Glu Phe Lys Lys Leu Gly Met Thr Ala Thr
 1 5 10 15

Ser Ala Asp Lys Gln
 20

<210> 84
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 P3D Peptide

<400> 84
 Leu Gly Met Thr Ala Thr Ser Ala Asp Lys Asn Val Pro Gln Leu Lys
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Pro Val Ser Glu Gln
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<210> 85
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 P3D Peptide

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 Pro Gln Leu Lys Pro Val Ser Glu Leu Thr Phe Leu Lys Arg Ser Phe
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Asn Leu Val Glu Gln
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<210> 86
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P3D Peptide

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Ser Glu Lys Thr Ile Trp Ser Leu Ile Ala Trp Gln Arg Ser Asn Ala
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Glu Phe Glu Gln
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<210> 87

<211> 20

<212> PRT

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P3D Peptide

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Ser Leu Ile Ala Trp Gln Arg Ser Asn Ala Glu Phe Glu Gln Asn Leu
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Glu Asn Ala Gln
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<210> 88

<211> 21

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P3D Peptide

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Trp Gln Arg Ser Asn Ala Glu Phe Glu Gln Asn Leu Glu Asn Ala Gln
1 5 10 15

Trp Phe Ala Phe Gln
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<210> 89

<211> 20

<212> PRT

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<223> Description of Artificial Sequence:Synthetic
Peptide

<400> 89

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
1 5 10 15

Ala Ala Ala Ala
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<210> 90
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<212> PRT
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Peptide

<400> 90
Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
1 5 10 15

Ala Ala Ala Ala Gln
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<210> 91
<211> 20
<212> PRT
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Peptide

<400> 91
Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5 10 15

Gly Gly Gly Gly
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<210> 92
<211> 21
<212> PRT
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Peptide

<400> 92
Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5 10 15

Gly Gly Gly Gly Gln
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<210> 93
<211> 20
<212> PRT
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Peptide

27

<400> 93
Gly Gly Gly Gly Gly Ala Ala Ala Ala Ala Gly Gly Gly Gly Gly Ala
1 5 10 15

Ala Ala Ala Ala
20

<210> 94
<211> 21
<212> PRT
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Peptide

<400> 94
Gly Gly Gly Gly Gly Ala Ala Ala Ala Ala Gly Gly Gly Gly Gly Ala
1 5 10 15

Ala Ala Ala Ala Gln
20